

AUG 14 2006

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant:	Ronald A. Askeland et al.	Examiner:	Lam S. Nguyen
Serial No.:	10/066,529	Group Art Unit:	2853
Filed:	January 31, 2002	Docket No.:	100201207-1
Title:	ESTIMATING LOCAL EJECTION CHAMBER TEMPERATURE TO IMPROVE PRINthead PERFORMANCE		

**CERTIFICATE OF TRANSMISSION**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

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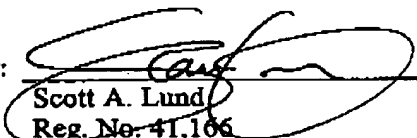
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By:

  
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## PATENT APPLICATION

ATTORNEY DOCKET NO. 100201207-1

IN THE  
UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s): Ronald A. Askeland et al.

Confirmation No.: 3681

Application No.: 10/066,529

Examiner: Lam S. Nguyen

Filing Date: January 31, 2002

Group Art Unit: 2853

Title: ESTIMATING LOCAL EJECTION CHAMBER TEMPERATURE TO IMPROVE PRINTHEAD  
PERFORMANCE

Mail Stop Appeal Brief - Patents  
Commissioner For Patents  
PO Box 1450  
Alexandria, VA 22313-1450

TRANSMITTAL OF REPLY BRIEFTransmitted herewith is the Reply Brief with respect to the Examiner's Answer mailed on June 13, 2006.

This Reply Brief is being filed pursuant to 37 CFR 1.193(b) within two months of the date of the Examiner's Answer.

(Note: Extensions of time are not allowed under 37 CFR 1.136(a))

(Note: Failure to file a Reply Brief will result in dismissal of the Appeal as to the claims made subject to an expressly stated new ground rejection.)

No fee is required for filing of this Reply Brief.

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Rev 10/06 (ReplyBrief)

AUG 14 2006

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Appellant:	Ronald A. Askeland et al.	Examiner:	Lam S. Nguyen
Serial No.:	10/066,529	Group Art Unit:	2853
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Title:	<b>ESTIMATING LOCAL EJECTION CHAMBER TEMPERATURE TO IMPROVE PRINthead PERFORMANCE</b>		

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**REPLY BRIEF TO EXAMINER'S ANSWER**

**Mail Stop Appeal Brief – Patents**  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir/Madam:

This Reply Brief is presented in response to the Examiner's Answer mailed June 13, 2006, and in support of the Notice of Appeal filed March 3, 2006 and the Appeal Brief filed April 11, 2006, appealing the rejection of claims 3-11, 21, 22, 24, 25, 27, 28, and 30-32 of the above-identified application as set forth in the Final Office Action mailed January 30, 2006.

At any time during the pendency of this application, please charge any fees required or credit any overpayment due to Deposit Account No. 08-2025 pursuant to 37 C.F.R. 1.25. Additionally, please charge any fees required to Deposit Account No. 08-2025 under 37 C.F.R. 1.16, 1.17, 1.19, 1.20 and 1.21.

Appellant respectfully requests reconsideration and reversal of the Examiner's rejection of pending claims 3-11, 21, 22, 24, 25, 27, 28, and 30-32.

**Reply Brief to Examiner's Answer**

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**ARGUMENT****Reply to Examiner's Response to Argument**

As outlined in the Appeal Brief at pages 6-7 and 9, independent claims 24, 27, 30, and 31 each estimate an actual temperature of the printhead assembly based on (1) a measured or current operating temperature of the printhead assembly, (2) a thermal response model of the printhead assembly, and (3) an ejection history of the ejection elements, wherein the thermal response model includes (a) a first set of parameters when the ejection elements have been fired (i.e., the printhead assembly has been printing) and (b) a second set of parameters when the ejection elements have not been fired (i.e., the printhead assembly has not been printing).

The Examiner contends that "Smith et al.'s process, that uses the measured/current temperature (the output of the thermistor) in conjunction with thermal models (thermal response) that is compared with the nozzle profile (ejection history) to provide an information or condition in order to control the printhead temperature accordantly by adjusting or optimizing a pulse-width energy provided to ejection/printing elements, anticipates the claimed estimation because both processes take into account the same input information and provide outputs having the same function." Examiner's Answer, page 6-7. In addition, the Examiner contends that "[t]he Smith et al. patent thus teaches the first and second parameters regarding to the use of the ejection element (nozzle) for firing." Examiner's Answer, page 7.

Once again, Appellant notes that to anticipate a claim under 35 U.S.C. 102, a reference must teach every element of the claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987) ("A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference"). In addition, Appellant notes that to establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974).

As recognized by the Examiner, the Smith et al. patent discloses use of thermal models of the pens or printheads used in conjunction with printhead temperature sensors to provide information useful in controlling printhead temperature, and teaches that profiles of

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the use of each nozzle, when compared with a thermal model, provide information useful in controlling printhead temperature. As outlined in the Appeal Brief at pages 7-8 and 10-11, the Smith et al. patent provides temperature compensation and control for different printhead temperatures, and only discloses temperature sensors for use in estimating the printhead temperature. In addition, as outlined in the Appeal Brief at page 7, the use profile of the Smith et al. patent is used to control printhead temperature and maintain uniformity in the ink drops.

The Smith et al. patent, however, does not disclose using the use profiles to estimate an actual temperature of the printhead assembly. More importantly, the Smith et al. patent does not disclose estimating an actual temperature of the printhead assembly based on (1) a measured or current operating temperature of the printhead assembly, (2) a thermal response model of the printhead assembly, and (3) an ejection history of the ejection elements, wherein the thermal response model includes (a) a first set of parameters when the ejection elements have been fired (i.e., the printhead assembly has been printing) and (b) a second set of parameters when the ejection elements have not been fired (i.e., the printhead assembly has not been printing).

Thus, for the reasons set forth above, as well as the reasons set forth in the Appeal Brief filed April 11, 2006, Appellant submits that the Smith et al. patent does not teach or suggest each and every element of independent claims 24, 27, and 31. Accordingly, Appellant submits that independent claims 24, 27, and 31 are each patentably distinct from the Smith et al. patent. Furthermore, as dependent claims 3-11 and 25 further define patentably distinct claim 24, dependent claim 28 further defines patentably distinct claim 27, and dependent claim 32 further defines patentably distinct claim 31, Appellant submits that these dependent claims are also patentably distinct from the Smith et al. patent. Appellant, therefore, respectfully submits that the rejection of claims 3, 24, 27, and 31 under 35 U.S.C. 102(b) is not correct and should be withdrawn, and that claims 3-11, 24, 25, 27, 28, 31, and 32 should be allowed.

Furthermore, for the reasons set forth above, as well as the reasons set forth in the Appeal Brief filed April 11, 2006, Appellant submits that the Examiner has not established a *prima facie* case of obviousness of independent claim 30. Accordingly, Appellant submits that independent claim 30 is patentably distinct from the Smith et al. and Prakash et al.

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patents. As dependent claims 21-22 further define patentably distinct claim 30, Appellant submits that dependent claims 21-22 are also patentably distinct from the Smith et al. and Prakash et al. patents. Appellant, therefore, respectfully submits that the rejection of claims 21-22 and 30 under 35 U.S.C. §103(a) is not correct and should be withdrawn, and that claims 21-22 and 30 should be allowed.

**Reply Brief to Examiner's Answer**

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**CONCLUSION**

For the above reasons, Appellant respectfully submits that the art of record neither anticipates nor renders obvious the claimed invention. Thus, the claimed invention does patentably distinguish over the art of record. Appellant, therefore, respectfully submits that the above rejections are not correct and should be withdrawn, and respectfully requests that the Examiner be reversed and that all pending claims be allowed.

Any inquiry regarding this Reply Brief should be directed to either James R. McDaniel at Telephone No. (858) 655-4157, Facsimile No. (858) 655-5859 or Scott A. Lund at Telephone No. (612) 573-2006, Facsimile No. (612) 573-2005. In addition, all correspondence should continue to be directed to the following address:

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CERTIFICATE UNDER 37 C.F.R. 1.8: The undersigned hereby certifies that this paper or papers, as described herein, are being facsimile transmitted to the United States Patent and Trademark Office, Fax No. (571) 273-8300 on this 14<sup>th</sup> day of August, 2006.

By   
Name: Scott A. Lund